

REMARKS

Claims 1, 3-5, 7 and 10-26 are pending. Claims 2, 6 and 8-9 have been canceled without prejudice.

Support for new claims 11 and 12 which recite a specific polymer (d), can be found at pages 23-24 of the present Specification.

Support for new claim 13 can be found on page 34, 2nd paragraph.

Support for new claims 14-20 can be found in claims 3-5, 7, 11, 12 and 10, respectively.

Support for new claims 21 and 24 can be found in the description at page 35, lines 5 and 6.

Support for new claims 22 and 25 can be found in the description at page 30, 2nd paragraph and last line.

Support for new claims 23 and 26 can be found in the description at page 39, lines 1 and 2.

No new matter has been added by way of the above-amendment.

I. Prior Art Based Issues

The following prior art rejections are pending:

- A. Claims 1, 3, 4, 5 and 10 are rejected under 35 U.S.C. 103(a) as obvious over Shuichi et al (JP Pub. 2000/110077) in view of Hiroshi et al. (JP Pub. 2000/110068); and
- B. Claim 7 is rejected under 35 U.S.C. 103 (a) as obvious under Shuichi et al. in view of Hiroshi et al. as applied to the claims above, and further in view of Hiromitsu et al. (JP Pub. 2002/371474).

Applicants respectfully traverse Rejections A and B.

I - A. Advantages of the Present Invention

Softeners and sizing agents are typified as fiber product treating agents for general domestic use. The softeners serve to soften fiber products such as clothes to make these fiber products have a soft and comfortable finish. The sizing agents serve to give tenseness to fiber products to make these fiber products have a comfortable feel near to that of new products to the touch. These softeners and sizing agents are each used according to the user's preferences and the type of fiber product to be applied. However, there is a current tendency to use a large amount of softener at the expense of the amount of the sizing agent, since the finished feel obtained by the softener is preferred to that obtained by a sizing agent. As such, the demand for sizing agents tends to be decreased year by year. This is considered to be because there is a tendency not to prefer a rough and starchy feel obtained with the sizing agent.

Currently, however, the preference of users has changed and users are not satisfied with current softeners for the diversified types of clothing. In view of this situation, there is a strong demand for a treating agent that gives fiber products a feel which has not been accomplished by a softener or sizing agent alone. That is, there is a strong demand for a treating agent which will give the fibers a tensile quality, without a starchy feel and is also smooth.

Also, another reason why the sizing agent is not preferred is that it requires a lot of time and effort for treatment. With the use of a conventional sizing agent, it is preferred to sort fiber products into those treated with a sizing agent and those treated without a sizing agent during a washing process. As such, time and effort are required for the sorting.

When a user charges a sizing agent, it is necessary that he charges it by hand and chooses the timing of charge, which requires considerable time and effort. It is therefore desired to develop a treating agent that requires no separate sorting operations and permits the use of the automatic charge port without any particular problems, such as film formation.

Moreover, when clothes such as shirts and polo-shirts are washed, wrinkles are formed through washing/rinsing/dewatering/drying. In the particular case of clothes containing cellulose type fibers such as cotton, wrinkles are formed to the extent requiring pressing of the wrinkled clothes. Also, shirts or the like which have been treated to stabilize their shape have been recently marketed. However, these products lose their shape-stabilizing effect when they are worn/washed repeatedly and therefore must be ironed (pressed). However, because this ironing is time consuming, there is a strong desire to develop a method making it possible to remove wrinkles simply to the extent that clothes can be worn without ironing.

The inventors of the present invention have developed treating agents which solve the above-problems. That is, the invention fills the strong market demand for a treating agent which gives the fibers a tensile quality, without feeling starchy and are smooth to the touch.

The inventive fiber product treating agent composition which accomplishes the above-described goals, comprises the following components (a), (b), (c) and (d):

(a) a nonionic surfactant containing 1 to 3 polyoxyalkylene groups having the number-average addition mol number of the oxyalkylene group of 50 to 200 and 1 to 3 hydrocarbon groups having 14 to 32 carbon atoms and having an HLB of 16 or more and a melting point of 30 to 80°C,

(b) an amino-modified silicone compound,

(c) at least one type selected from a tertiary amine in which one or two groups of the three groups bonded to a nitrogen atom of the tertiary amine is/are a hydrocarbon group having 10 to 20 carbon atoms and the remainder group(s) is/are a hydrocarbon group which has 1 to 3 carbon atoms and may be substituted with a hydroxy group, an acid salt thereof and a quaternary product thereof, and

(d) polymer compound having the weight-average molecular weight of 2000 or more (excluding component (a) and component (b)),

wherein a mass ratio of the component (a)/the component (b) is 4/1 to 1/4,

a mass ratio of the component (a) /the component (c) is 20/1 to 1/1, and

a mass ratio of [the component (a) + component (b)]/ [component (c) + component (d)] is 95/5 to 80/20.

This specific combination of components gives the inventive treating agent unexpected advantages over compositions of the prior art. For example, component (a) is a nonionic surfactant specified by a particular HLB value range and melting point range. This provides the claimed composition and the claimed method with an unexpected advantage in view of the tensile quality of the treated fiber product. Another advantage is that the combination of (a) with (b), (c) and (d) gives synergistic properties. And yet another advantage is that by incorporating components (b), (c) and (d) and controlling the mass proportions between (a), (b), (c) and (d), enables the component (a) to work effectively to improve the tensile quality of the treated fiber product. In addition, it was found by the inventors, that when component (c), a specified cationic compound, is in a high concentration, that component (c) works to increase the adsorption of the component (a). For this reason the amount of (c) is kept small relative to the amount of (a). If (c) is used in too large of an amount relative to component (a), the tensile quality will be reduced, as discussed in the description at page 20.

These advantages can also be seen by reviewing the experimental evidence in the specification and were first noted by the present inventors.

We now turn to the cited references.

I - B. Shuichi et al.

The Examiner has relied upon Shuichi et al. for teaching the following components (a)-(d) as shown in the following table:

Instant Claims

Shuichi et al.

(a) Nonionic Surfactant (b) Amino modified silicone (c) Tertiary amine (d) Polymer	(C) (A) (B) (D) Polyhydric alcohol
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It is unclear from the Examiner's comments exactly which component of Shuichi et al. that the Examiner equates with component (d) polymer of the instant invention. It appears that the Examiner is equating (d) with the polyhydric alcohol described at paragraph [0021] of Shuichi et al. However, the Examiner should not be confused by the use of the prefix "poly" in the polyhydric alcohol of Shuichi et al. The polyhydric alcohols of Shuichi et al. are not polymers. Shuichi et al. use the prefix "poly" to denote that the alcohol compounds have more than one alcohol "-OH" group attached to them. Accordingly, the present claims distinguish from Shuichi et al., since the polyhydric alcohol of Shuichi et al. does not have a weight-average molecular weight of 2000 or more as required by inventive claim 1.

Furthermore, the invention of Shuichi et al. is directed to a softener. As noted in the table above, the Examiner has equated Shuichi et al.'s silicone compound with the inventive component (b), and the Examiner has equated Shuichi et al.'s cationic compound with the inventive component (c). These compounds are used by Shuichi et al. for their finishing effects, see the attached partial English translation of Shuichi et al. at [0010] and [0018]. Shuichi et al. is silent on the inventive advantages of improving the finishing effects while retaining the tensile quality.

As noted above, the Examiner is equating a nonionic surfactant of Shuichi et al with the inventive component (a). Shuichi et al. use the nonionic surfactant as an emulsifier as a base for the softener composition. It is taught in the attached English translation of paragraph [0020] of Shuichi et al. that the nonionic surfactant is used to avoid the treating agent from increasing in viscosity and gelling at a high temperature during storage. This is not the purpose of inventive

component (a). Also, the nonionic surfactant of Shuichi et al. is used in a smaller amount than the cationic compound. This is contrary to the presently claimed invention.

As discussed above, Shuichi et al. fail to suggest anything about the results of the invention. For example, there is no suggestion by Shuichi et al. that the nonionic surfactant provides the treated fiber product with a tensile quality.

Accordingly, significant patentable distinctions exist between the teachings of Shuichi et al. and the presently claimed invention.

I - C. Hiroshi et al. and Hiromitsu et al.

With respect to Hiroshi et al., this disclosure is directed to a deodorant. Hiroshi et al. fail to cure the deficiencies of Shuichi et al., since Hiroshi et al. fail to teach or suggest that a nonionic surfactant is useful as a base that provides good tensile qualities. Lastly, Hiroshi et al. teach that the nonionic surfactant is used in a small amount to improve a liquid stability as is clear from the attached English translation of paragraph [0005] of Hiroshi et al.

Accordingly, significant patentable distinctions exist between the combined teachings of Shuichi et al and Hiroshi et al and the presently claimed invention. It is further noted that Hiromitsu et al. is cited to teach the subject matter of claim 7. It is respectfully submitted that Hiromitsu et al. do not cure the deficiencies of the primary reference.

As the MPEP directs, all the claim limitations must be taught or suggested by the prior art to establish a *prima facie* case of obviousness. See MPEP § 2143.03. In view of the fact that the claimed invention and its advantages are not taught in the prior art, a *prima facie* case of obviousness cannot be said to exist. As such, withdrawal of Rejection A and Rejection B is requested.

In view of the above amendment, applicant believes the pending application is in condition for allowance.

Conclusion


In view of the above remarks, it is believed that claims are allowable.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Garth M. Dahlen, Ph.D., Esq., Reg. No. 43,575 at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.14; particularly, extension of time fees.

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Respectfully submitted,

By  #43575
John W. Bailey
Registration No.: 32,881
BIRCH, STEWART, KOLASCH & BIRCH, LLP
8110 Gatehouse Road
Suite 100 East
P.O. Box 747
Falls Church, Virginia 22040-0747
(703) 205-8000
Attorney for Applicant

Attachments: Partial translation of JP 2000-110077 (Shuichi et al.) (2 pages)
Partial translation of JP 2000-110068 (Hiroshi et al.) (1 page)